

Remarks

Claims 1-8 were pending in the above-identified application. By way of the present amendment, Applicants have amended claims 7 and 8. No claims have been cancelled, and no new claims have been added. Claims 1-8 therefore remain pending and under examination. Applicants respectfully request reconsideration and allowance of the claims in view of the amendments and the remarks provided herein.

Allowance of Claims

Applicants thank the Examiner for the allowance of claims 1 and 3-5.

Claim Rejection under 35 U.S.C. §102

The Examiner rejected claim 6 under 35 U.S.C. §102(b) as being anticipated by Spiteller *et al.* Applicants respectfully traverse the rejection. At the outset, Applicants assert that the rejection should have been made under 35 U.S.C. §102(a) rather than 35 U.S.C. §102(b), because the present application has a priority date of April 14, 2004, based on U.S. Provisional Patent Application Serial No. 60/562,119, while Spiteller *et al.* was published on November 26, 2003, which is less than one year before the priority date of the present application. Accordingly, because the rejection could not have been made under 35 U.S.C. §102(b), Applicants will treat the rejection as having been made under 35 U.S.C. §102(a).

The text of 35 U.S.C. §102(a) states that a person shall be entitled to a patent unless “the invention was known or used by others in this country... before the invention thereof by the applicant for patent.” (emphasis added). Furthermore, as described in M.P.E.P. §2132.01, “a rejection can also be overcome by submission of a specific declaration by the applicant establishing that the article is describing applicant’s own work.” This is based on *In re Katz*, in which the inventor Katz stated in a declaration that the coauthors of the publication used to establish the rejection were students working under his direction and supervision, and therefore the presence of these individuals in the publication as coauthors was not sufficient for the

publication to qualify as being “by others” as required by 35 U.S.C. §102(a). *In re Katz*, 687 F.2d 450, 215 USPQ 14 (CCPA 1982).

Applicants herein submit a declaration under 37 CFR §1.131 declaring that the article by Spiteller *et al.* is by the inventor Heinz G. Floss, the last listed author of the paper, and that the other coauthors were working under his direction and supervision. The reference Spiteller *et al.* is therefore not an article by others, but rather describes applicant’s own work. Because Spiteller *et al.* is not an article by others, it cannot be used to establish a rejection under 35 U.S.C. §102(a), and applicants respectfully request that the rejection of claim 6 under 35 U.S.C. §102(b) (which is being treated as having been 35 U.S.C. §102(a)) over Spiteller *et al.* be withdrawn.

Claim Rejections under 35 U.S.C. §103.

Claims 2, 7, and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda Chemical Industries, Ltd., Japan (JP 58167592). Specifically, the Examiner has asserted that JP 58167592 teaches a generic group of maytansinoid derivatives that encompass the compounds claimed by Applicants, and that the teaching of a genus of useful compounds is sufficient to render *prima facie* obvious a species falling within the genus. Applicants respectfully traverse the rejection.

The fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness. See *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994). Rather, the patentability of a claim to a specific compound or subgenus embraced by a prior art genus should be analyzed no differently than any other claim for purposes of 35 U.S.C. 103. Namely, the office should establish a *prima facie* case of unpatentability considering the factors set out by the Supreme Court in Graham v. John Deere.

However, applicants note that claim 2 has also been rejected under 35 U.S.C. §103 as being obvious over the maytansine derivative RN 89153-72-0 or RN 89153-73-1 (both obtained

from CAPLUS) as a result of being a homolog. Unlike the genus-species situation described above, A *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. " See In re Dillon, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991). The compound of claim 2 differs from the cited compounds as a result of bearing an isopropyl group rather than an ethyl or isobutyl group, as noted by the examiner. However, a *prima facie* case of obviousness can be overcome through an evaluation of evidence of secondary considerations.

In the present case, the claimed compounds have unusual properties that distinguish them from other maytansinoid compounds. More specifically, applicants have shown that the presently claimed compounds have either improved metabolism (Group I compounds) or possess the characteristics of both maytansinoid compounds and geldanamycin compounds (Group II compounds), which distinguishes them from the prior art. See paragraphs [023] and [024]. The compound of claim 2 is a group II compound, and as a result of its maytansinoid and geldanamycin qualities is able to exhibit an antitumor effect both through inhibition of tubulin polymerization and inhibition of heat shock protein 90. As a result of the unexpected ability of the compound of claim 2 to exhibit both of these effects, the compound of claim 2 is not obvious, and Applicants respectfully request that the rejection of claim 2 for being obvious in view of JP 58167592, or in the alternative in view of the maytansine derivative RN 89153-72-0 (obtained from CAPLUS), be withdrawn.

The examiner has also rejected claims 7 and 8, which are to methods of using the compounds of any of claims 1-6 to treat a cell proliferative disease or fungal growth, respectively. As noted above, applicants assert that the examiner has failed to establish a *prima facie* case of obviousness of claims 7 and 8 over JP 58167592, because the mere existence of a genus species relationship is insufficient. Furthermore, because of the unexpected properties of the compounds of Group I and Group II, as described above, applicants respectfully request that the rejection of claims 7 and 8 over both JP 58167592 and the structures identified in the CAS registry system be withdrawn.

Claim Rejection under 35 U.S.C. §112, 1st paragraph

The Examiner has rejected claim 7 under 35 U.S.C. §112, first paragraph, for lack of enablement. More specifically, the Examiner indicated that the claims are not enabling for the treatment of all types of cell proliferative diseases. Applicants respectfully traverse the rejection, but in the interest of furthering prosecution have amended the claims to recite treatment of only prostate cancer, lung cancer, acute leukemia, multiple myeloma, bladder carcinoma, renal carcinoma, colorectal carcinoma, neuroblastoma, and melanoma, support for which is found in paragraph [021] of the specification. Applicants further note that maytansinoids have been shown to have a strongly inhibiting effect against a wide variety of types of cancer. See for example pages 6 and 7 of Cassady *et al.*, which is cited in paragraph [030] of the specification. The broad spectrum of activity of these compounds appears to be based, at least in part, on their ability to inhibit microtubule assembly, which is a common feature to all rapidly proliferating cells. Accordingly, in view of the amendment of the claim and the arguments provided herein, applicants respectfully request that the rejection of claim 7 under 35 U.S.C. §112, second paragraph, be withdrawn.

Claim Rejection under 35 U.S.C. §112, 2nd paragraph

The Examiner has rejected claim 8 under 35 U.S.C. §112, second paragraph, for being indefinite. More specifically, the Examiner has indicated that the claim lacks the intended host to whom the compound is administered to. Applicants have amended claims 7 and 8 to include the phrase “to an animal in need thereof,” support for which can be found in paragraph [021] of the specification, and respectfully request that the rejection of claim 8 under 35 U.S.C. §112, second paragraph, be withdrawn.

In view of the above-described amendments and remarks, Applicants submit that claims 1-8 are in condition for allowance, and respectfully requests same. The Examiner is asked to

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contact the undersigned at the phone number listed below if there are any questions regarding the amendments or remarks provided herein.

Respectfully submitted,

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